IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A DC coupled class AB transconductance block, comprising:

first DC coupled transconductance stage comprising MOSFET amplification devices operably coupled to produce a first differential current from a differential input voltage based on a first bias voltage;

second DC coupled transconductance stage comprising MOSFET amplification devices operably coupled to produce a second differential current based on the differential input voltage and a second bias voltage, wherein output current of the class AB voltage current converter is a sum of the first differential current and the second differential current;

third DC coupled transconductance stage comprising MOSFET amplification devices operably coupled to produce a third differential current based on the differential input voltage and a third bias voltage, wherein output current of the class AB voltage current converter is a sum of the first differential current, the second differential current and the third differential current; and

a resistor ladder operable as a biasing circuit operably coupled to produce the first bias voltage, the second bias voltage and the ~~secondary~~ third bias voltage, wherein the first bias voltage is greater than the second[[ary]] bias voltage and wherein the second bias voltage is greater than the third bias voltage wherein each bias voltage for each of the transconductance stage is produced from an output end of a resistor of the resistor ladder.

2. (Original) The class AB voltage to current converter of claim 1, wherein the first transconductance stage further comprises:

first DC coupled transistor operably coupled to receive a combination of a first leg of the differential input voltage and the first bias voltage; and

second DC coupled transistor operably coupled to receive a combination of a second leg of the differential input voltage and the first bias voltage, wherein the second transistor is operably coupled to the first transistor such that the first transistor produces a first leg of the first differential current and the second transistor produces a second leg of the first differential current.

3. (Currently Amended) The class AB voltage to current converter of claim 1, wherein the second transconductance stage further comprises:

first DC coupled transistor operably coupled to receive a combination of a first leg of the differential input voltage and the second[[ary]] bias voltage; and

second DC coupled transistor operably coupled to receive a combination of a second leg of the differential input voltage and the second[[ary]] bias voltage, wherein the second transistor is operably coupled to the first transistor such that the first transistor produces a first leg of the ~~secondary~~ second differential current and the second transistor produces a second leg of the ~~secondary~~ second differential current.

4. (Currently Amended) The class AB voltage to current converter of claim wherein the third transconductance stage further comprises: ~~3 further including a third transconductance stage, the third transconductance stage further comprising:~~

first DC coupled transistor operably coupled to receive a combination of a first leg of the differential input voltage and the third ~~secondary~~ bias voltage; and

second DC coupled transistor operably coupled to receive a combination of a second leg of the differential input voltage and the third ~~secondary~~ bias voltage, wherein the second transistor is operably coupled to the first transistor such that the first transistor produces a first leg of the third ~~secondary~~ differential current and the second transistor produces a second leg of the third ~~secondary~~ differential current.

5. (Currently Amended) The class AB voltage to current converter of claim 4 further including a fourth transconductance stage, the fourth transconductance stage further comprising:

first DC coupled transistor operably coupled to receive a combination of a first leg of the differential input voltage and the secondary bias voltage; and

second DC coupled transistor operably coupled to receive a combination of a second leg of the differential input voltage and the fourth ~~secondary~~ bias voltage, wherein the second transistor is operably coupled to the first transistor such that the first transistor produces a first leg of the ~~secondary~~ fourth differential current and the second transistor produces a second leg of the ~~secondary~~ fourth differential current.

6. (Currently Amended) The class AB voltage to current converter of claim 5 further including a fifth transconductance stage, the fifth transconductance stage further comprising:

first DC coupled transistor operably coupled to receive a combination of a first leg of the differential input voltage and the fifth ~~secondary~~ bias voltage; and

second DC coupled transistor operably coupled to receive a combination of a second leg of the differential input voltage and the ~~secondary~~ fifth bias voltage, wherein the second transistor is operably coupled to the first transistor such that the first transistor produces a first leg of the ~~secondary~~ fifth differential current and the second transistor produces a second leg of the ~~secondary~~ fifth differential current.

7. (Original) The class AB voltage to current converter of claim 1, wherein the biasing circuit further comprises a reference current source operably coupled to a current mirror to produce a bias signal.

8. (Original) The class AB voltage to current converter of claim 1, wherein the biasing circuit further comprises:

first reference voltage source operably coupled to produce the first bias voltage;

second reference voltage source operably coupled to produce the secondary bias voltage;

first resistive pair operably coupled to provide the first bias voltage to the first transconductance stage; and

second resistive pair operably coupled to provide the secondary bias voltage to the secondary transconductance stage.

9. (cancelled)

10. (Currently Amended) The class AB voltage to current converter of claim [[9]] 1 further comprises:

fourth transconductance stage operably coupled to produce a fourth differential current based on the differential input voltage and a fourth bias voltage, wherein output current of the class AB voltage current converter is the sum of the first differential current, the second[[ary]] differential current, and the third differential current, and the fourth differential current wherein the biasing circuit produces the fourth bias voltage, wherein the third bias voltage is greater than the fourth bias voltage.

11. (Original) The class AB voltage to current converter of claim 10 further comprises:

fifth transconductance stage operably coupled to produce a fifth differential current based on the differential input voltage and a fifth bias voltage, wherein output current of the class AB voltage current converter is the sum of the first differential current, the second differential current, the third differential current, the fourth differential current and the fifth differential current, wherein the biasing circuit produces the fifth bias voltage, wherein the fourth bias voltage is greater than the fifth bias voltage.

12. (Currently Amended) A DC coupled class AB transconductance block, comprising:

first DC coupled transconductance stage operably coupled to produce a first differential current from a differential input voltage based on a first bias voltage produced from a first node of resistor ladder;

second DC coupled transconductance stage operably coupled to produce a second differential current based on the differential input voltage and a second bias voltage produced from a second node of a resistor ladder, wherein output current of the class AB voltage current converter is a sum of the first differential current and the secondary differential current;

~~biasing circuit operably coupled to produce a bias current;~~

a resistor ladder comprising a plurality of resistors wherein at least one resistor is coupled between each transconductance stage of the DC coupled class AB transconductance block and wherein the second node is electrically downstream from the first node and further wherein there is a least one resistor of the resistor ladder between the first and second nodes;

wherein each transconductance stage is biased to a different voltage level relative to all other transconductance stages; and

wherein an output transconductance signal is a sum of each of the transconductance signals produced by each of the transconductance stages.

13. (Original) The DC coupled class AB transconductance block of claim 12 further comprising a third transconductance stage.

14. (Cancelled)

15. (Currently Amended) The DC coupled class AB transconductance block of claim [[14]]13 further comprising a fourth transconductance stage.

16. (Original) The DC coupled class AB transconductance block of claim 15 further comprising at least five transconductance stages.

Claims 17-21. (Cancelled)